Winter 2012-2013 Outlook for Southwest Lower Michigan

By William Marino

The Climate Prediction Center (CPC) temperature (Figure 1), precipitation (Figure 2), and snowfall (not shown) outlooks for Southwest Lower Michigan for the winter of 2012-2013 all call for equal chances (33%) of above, near, or below normal values.

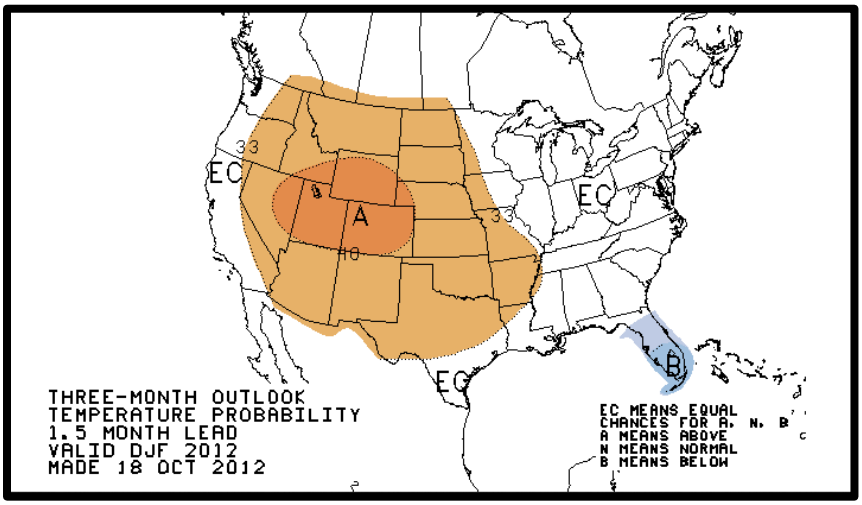

Figure 1. CPC three month outlook for temperature probabilities.

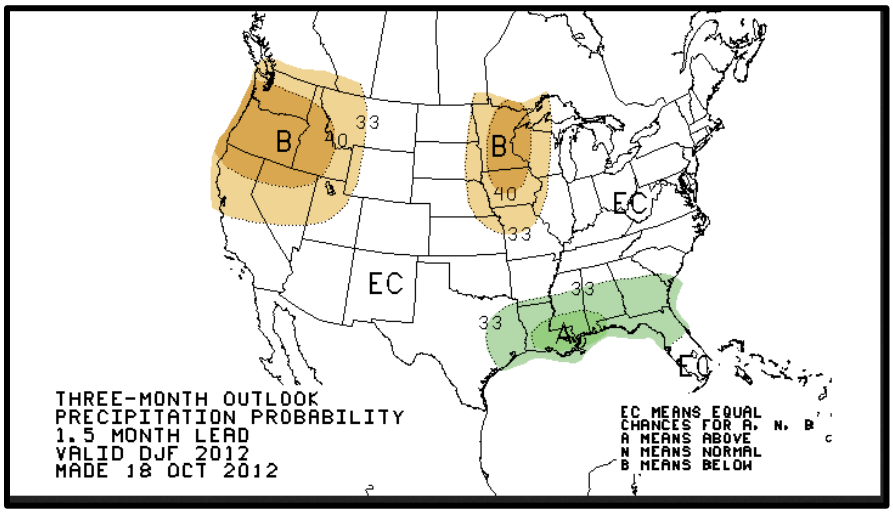

Figure 2. As in Figure 1, except for precipitation probabilities.

This outlook is based on the forecast for ENSO (El Niño Southern Oscillation) to be in the neutral phase. This means conditions are expected to be near normal with neither an El Niño nor a La Niña expected. Also considered were numerous computer models. The trend in the winter temperature (figure not shown) was also considered. The trend over the past 10 winters over Southwest Lower Michigan was near neutral (neither warming nor cooling has occurred).

Typical atmospheric patterns related to a neutral ENSO are shown in Figure 3. The location of the polar jet stream shown in the diagram puts Southwest Lower Michigan near the boundary dividing cold polar air and the more temperate air that comes from the eastern Pacific. This suggests that cold spells and warm spells could be more extreme compared to the previous two winters. The winter of 2012/2013 could resemble the winters of 2004/2005 and 2008/2009, which often had two weeks of warmer than normal temperatures followed by two weeks of colder than normal conditions.

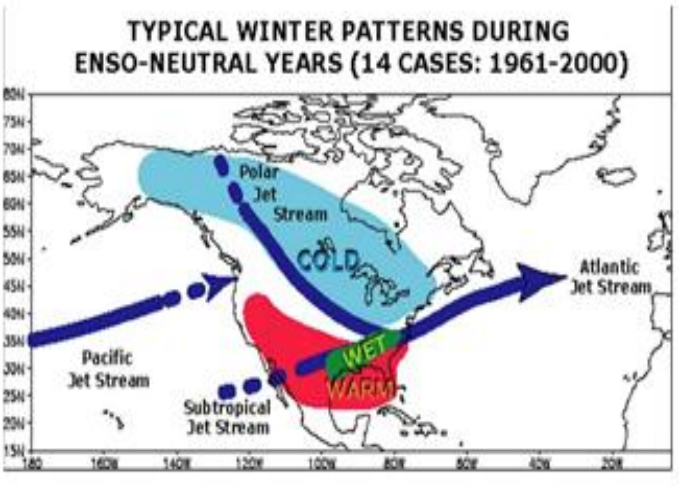

Figure 3. CPC's depiction of the typical winter weather pattern during ENSO neutral years. Blue arrows are the positions of the typical jet streams that impact the United States.

Average measured November to March snowfall from 38 past years in which ENSO was neutral gives near normal values (not shown). The average was 6.2 inches above normal at Grand Rapids, 3.3 inches below normal at Muskegon, and exactly normal at Lansing. These values should not be taken too literally however, since seasonal snowfall totals are notoriously sensitive to individual events.

Below are some links to key web sites related to this outlook:

Climate Prediction Center Long Range 3 Month Forecasts

Climate Predication Center's Discussion for the Long Range Forecast

Probability of Temperature Exceeding Normal for the Winter Forecast

CPC Climate Briefing Page

(see # 31 for ENSO forecast, # 32 for composite forecasts, #42 Drought blend tools)

Climate Monitoring and Weather Monitoring

(AO index, PNA index, NAO index, ENSO tracking, Madden-Julian tracking, Storm Tracks)